A COMPARATIVE STUDY OF RETARDATION
IN THE
PLYMOUTH PUBLIC SCHOOLS

BY

CLARENCE ARTHUR RUBADO

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Chapter 1.

The problem of retardation concerns itself chiefly with those pupils who do not keep up with their fellows. Any consideration of this problem must, of necessity concern itself with another class of pupils, namely, those who are ahead of their fellows.

We are realizing, more and more, that the education of children who, while they are not defective, do not keep up with their fellows, is a matter of great importance. These, constituting as they do, from 5 to 50 per cent (the average is 33 per cent) of our school population, can become sucesses or failures, according to the influences brought to bear upon them during their early years.

The greatest problem is to diagnose the case and place it in its proper place. There are many different standards by which the child can be judged, depending upon whether you are interested in his retardation in the home, in the community, or in the school. This will be confined to the retardation of the child in the school.

The cases of retardation have occupied the minds of school men for a considerable time. James E. Bryan, superintendent of schools at Camden, N. J., in 1907 devised a method for determining the extent and causes of retardation. But the beginning was probably made by the City Superintendent of New York, who in his report for 1904, invited atten-

tion to the fact that 39 per cent of the pupils in the elementary grades were older than the normal age for the grade. He continued to publish these facts in his reports and by this means probably reduced the percentage, for we find in his report for 1906 the percentage is only 30.

A study of retardation of pupils in five city school systems was made by Oliver P. Cornman, Ph. D., District Superintendent of schools. Philadelphia. Up to this time attempts to solve the problem had done little more than prove the existence of facts. By the methods then in use, childrens average for their grade were retarded, regardless of the cause and though they may have been passing through the grades at the normal pace.

Dr. Cornman studied five cities, namely: Philadelphia, Boston, New York, Camden, N. J., and Kansas City, these being the only cities from which he could obtain material.

By regarding a first grade child seven years of age or over as beyond the age limit for that grade, and a second grade child eight years of age as beyond the age limit for that grade, and so on throughout the grades, there were 61 per cent of the children beyond this limit. Boston had the smallest with 51 per cent and Kansas City the largest with 77.6 per cent. Advancing the normal age for the first grade to seven years 31.6 per cent were

still retarded. Boston again had the lowest with 21.6 per cent, and Kansas City the highest with 49.6 per cent.

Dr. Cornman gives as the results of this condition: arrested mental development; poor quality of product turned out; financial loss, for if a child takes ten years to complete the work he costs 25 per cent more to the state than the one making normal progress. The causes to which he attributes this condition are: certain physical defects; overcrowded classes; classification and promotion systems; inefficient teachers, principal or superintendent.

Roland P. Falkner, Ph. D., Commissioner of Education for Porto Rico from 1904 to 1907, believing that there were further facts concealed in the tables published by Dr. Cornman, studied them and published his findings in the May 15, 1908 number of the Psychological Clinic. He concludes that the dropping out of school depends more upon age than upon the degree of advancement in school studies, thus dispelling the conclusion that retardation increases the number of children in school, which would be the case if all were required to finish the elementary course of study.

He also argues that eliminating retardation would not decrease the cost of education, because if all the children fourteen years of age were in the seventh grade, there would be a great many more stay in school for the work of the eighth grade and so increase the cost in pro-

portion. He emphasizes the fact that the cost is not greater than it would be, but that there is a wasteful expenditure of public funds.

He suggests that the five tables are not necessarily comparable because the enrollment in some instances was taken in June and in others in September. The ages may have been taken in different manner in each place as well as the meaning of grade, which may differ widely. Take the matter of age, for example. That may be taken by asking the child his age, or by taking the date of his birth. If you ask a child his age, he will tell you, usually, his age at last birthday, and yet he may be within one month of his next birthday. A child nine years old last week and a child ten years old next week, will then be recorded as of the same age. Dr. Falkner recommends recording their age on October 1 as it was in September.

The fact that some retarded children had been put in special classes and so not counted as enrolled in any grade would cut down the per cent of retardation. But in 1907 the number of pupils taught in special classes was so small that he disregarded it as seriously affecting the result. Now it would have a decided effect, for the number of children thus taught has greatly increased.

Both Dr. Falkner and Dr. Cornman make a plea for some uniform system of obtaining statistics.

Monroe, arranging the data of several publications, finds approximately 90 per cent completing the fourth grade, 80 per cent reaching the fifth grade, 70 per cent reaching th e sixth grade, 55 per cent the seventh, 40 per cent the eighth, 35 per cent entering the high school, 25 per cent the second year, 17 per cent the third year and 14 per cent reaching the last year.

Leonard P. Ayres made a study of retardation in the schools of New York City in 1907 on an investigation of 20,000 school children of Manhattan in 1908. He also used the statistics compiled in several other cities outside of New York. The object of this investigation may be summed up in the three questions which he proposed to answer: (a) How many children in our schools fail to make normal progress from grade to grade and why do they fail? (b) How many of the children drop out of school before finishing the elementary course and why do they drop out? (c) What are the facts and what are the remedies?

He finds that in the lower grades, before the process of elimination takes place, removing the badly retarded children, the average progress of the pupils is at the rate of eight grades in ten years, and concludes: " These conditions mean that our courses of study, as at present constituted, are fitted not to the slow child but the unusually bright one."

He deals also with the problem of the repeater, finding that there are from six per cent to thirty per cent, (an average of sixteen per cent) of the pupils repeating, which means an annual waste of $27,000,000.

Ayres gives the following causes of retardation: (a) late entrance; (b) irregular attendance; (c) illness; (d) physical defects; (e) race; (f) methods of promotion; (g) sex; and concludes from (g) that " these facts mean that our schools, as at present constituted, are far better fitted to the needs of the girls than they are to those of the boys."

As remedies he suggests: (a) better compulsory attendance laws and better enforcement of same; (b) agreement between the length of the course and the length of the compulsory attendance period; (c) medical inspection; (d) suitable courses of study; (e) more flexible grading; (f) a better knowledge of the facts.

Ayres reaches many of his conclusions by examining the number of children enrolled in the various grades, not allowing for the fact that in the twelve years being considered there has been a continual increase in the school population in lower grades and not allowing for the depletion in numbers due to death. He takes the position that it matters not whether a pupil entered late or failed after he entered, and he holds that late entrance makes for heterogeneous groups in grades, thus lessening the efficiency of instruction and lessening the chances for the child com-

pleting his elementary education: He then explains his attitude in answer to Greenwood's criticism of his conclusions. This criticism is due to the fact that by his method a child may enter at six and another at eight, both completing the work in eight years. Will one be retarded? Should we not solve two other problems first, namely; when should he enter and why does he enter late?

ELIMINATION.

Many children, finding themselves at the end of the compulsory attendance period one or more grades below the final one, leave school without completing the elementary course. This process is termed elimination. A considerable part o f Ayres' investigation deals with this problem; Calling this a result of retardation, rather than a phase of it. I shall not further consider it.

The United States Bureau of Education published Bulletin No. 14 in 1911, which was prepared by James H. Van Sickle, Superintendent of Public Instruction, Springfield, Massachusetts, Lightner Witwer, Director Psychological Laboratory and Clinic, University of Pennsylvania, and Leonard P. Ayres, Director Division of Education, Russel Sage Foundation. They define retardation as a stage of mental development which can only be defined with reference to what we assume to be the regular course of normal development. Any child, the functions of whose brain are not developed up to the normal limit for his age, is suffering

from retardation. A stage of progress which may be retardation for one child may not be retardation for another. The child who stands at the head of the class in school may be more retarded than children who are at the bottom of the class. Some contend that the schools give relatively less training to those who are mentally well endowed than they do to the average pupil or the dullard.

These statements rather startle one and show the necessity of finding how many of these exceptional children there are in school, for we must have this before we can remedy the condition. This problem of the gifted child is not usually considered in a treatment of retardation.

It was first recognized by Dr. William T. Harris, superintendent of schools at St. Louis, when, 1872, he introduced a plan for making promotion fit different intellectual grades. Yet they confine their statistics to those who are average for their grade and call only those pupils retarded.

First Grade - Under eight years.
Second Grade - Under nine years.
Third Grade - Under ten years.
Fourth Grade - Under eleven years and so on to
Eighth Grade - Under fifteen years.

In this work is the first distinction as to repeaters. Formerly we were satisfied to know that a child was repeating the work of a grade. They now ask how many children are doing the work of their present grades for the second, third,

or fourth time. And more of this information is needed. The following table introduces the progress standard. It is for the fifth grade in nineteen schools in New York City.

Years in School	Ages										Total
	9	10	11	12	13	14	15	16	17	18	
2		1		1	1						3
3	1	8	7	9	1		1				27
4	33	62	22	13	5		1				136
5	9	100	192	81	36	16					434
6		12	68	111	42	9	6				248
7			9	27	37	19	3				95
8				3	12	13	2				30
9						4	1			1	6
10						1					1
Total	43	183	298	245	134	62	14			1	980

This data enables the superintendent to classify the children of the grade into four groups, according to their educational need and to find out which of them are over age because they entered school late and which ones are over age because they have made slow progress.

The children represented by the figures in the upper left hand section are of normal age and they have been making normal progress. They are not subject for specialized attention.

The children represented by the figures in the lower

left hand section are of normal age and have made slow progress. The reason they are not numbered among the average children is that they were very young when they entered school. Their cases are not yet serious, but they should be carefully watched.

Those represented by the figures in the upper right hand section are above the normal age and have made normal progress. They entered school late and the school is not to blame for their being over age. Yet they are mature and should be given special opportunity to make rapid progress.

The ones represented by the figures in the lower right hand section are both over age and have made slow progress. They are the serious cases and should be carefully examined. This group includes the chronic repeaters. A special report on their school progress would tell how many years they took for each grade.

This form of table is much better than the other because it gives much information not given in the other. It is harder to use because the data cannot be gathered until the individual school history of each child is secured, and a separate table has to be made for each grade. Where semi-annual promotions are in force, the table is extended to show both ages and time in school by semesters.

They advocate as a method for determining the causes of retardation, the finding of the salient differences between the promoted and non-promoted children.

They suggest recording all the facts regarding all the pupils at the close of the school term or year and tabulating them for the promoted and non-promoted pupils, so as to discover in what respects conditions in one group differ fromconditions in the other. This avoids the common error of gathering solely the data concerning the pupils who fail and then having no way to determine how these pupils differ from the successful ones.

The first record of the age-progress classification is found in the Psychological Clinic. Volume VI in an article entitled, "Age and Progress in a New York City School," by William E. Grady. His investigation was made in September 1912 and reported in the Jan. 15, 1913 Clinic. He states that the form used was suggested by the Bureau of Municipal Research of New York. He divides the blank into nine spaces by the use of double lines. This is the method used in the present study except that red and blue lines have been substituted for the double ruling. However, he did not study the pupils in the light of the nine fold classification.

Another phase of retardation is discussed by Prof. V. A. C. Henmon of the University of Wisconsin in Volume XIV - No. 6, Feb., 1914 of the Elementary School Teacher. He takes into consideration progress as well as age and compares the pupils in the various groups as to class standing. He finds that the various groups have, on the whole, approximately the same class standings for the same

progress group. A surprising feature of the study is that, while the average performances of the retarded pupils are lower than those of the normal and accelerated groups, the differences are very slight; thus calling attention to the fact that school marks are very unreliable. In general, he finds that the differences in scholarship through the various groups are slight.

In the report of the Education Survey of Cleveland, conducted by the Survey Committee of the Cleveland Foundation in 1915, Leonard P. Ayres reported on Child Accounting. He divides the children into nine groups according to age and progress. A child who is seven years old and in the first grade is considered to be of normal age for that grade. A child is making normal progress when he has been in school three years, (counting the present year), and is in the third grade. This method classifies children into nine groups as follows:

Under Age	-	Rapid Progress
Normal Age	-	Rapid Progress
Over Age	-	Rapid Progress
Under Age	-	Normal Progress
Normal Age	-	Normal Progress
Over Age	-	Normal Progress
Under Age	-	Slow Progress
Normal Age	-	Slow Progress
Over Age	-	Slow Progress

The same blanks are used by Mr. Ayres in 1911 in an investigation for 29 cities. The results were published in Bulletin No. 108, entitled, "Identification of the Misfit Child," published by the Division of Education, Russel Sage Foundation.

This classification is the one used in the present study. It places the responsibility for retardation where it belongs. Formerly all retarded children were blamed to the school. Now only those who make slow progress are considered retarded owing to school conditions. There are many who are over age because of late entrance or lost time, and their retardation may often be traced to influences and conditions far removed from school.Even then the school may indirectly be responsible. An investigation of each individual case will definitely place the responsibility.

Chapter II

AIM OF STUDY, MATERIALS AND STANDARDS.

AIM: -

The purpose of the study was to determine the present status of the children in the Plymouth, Wisconsin schools in regard to retardation. Then to discover the status of the children in the same school for 1910. By means of graphs and tables to compare the conditions for the two years.

In 1911 the schools adopted the semi-annual promotion plan and at the same time decided to allow more flexible promotion. The latter scheme was not very well organized, but each teacher was permitted, after conference with the supervisor, to promote a child, who in her judgement was able to do the work of the succeeding half-grade.

For some time these two schemes have been recommended as contributing to the decrease in the retardation and the object was to detect what effect they had.

The work is by no means final as this merely gives me a working basis upon which to carry on further investigation. It is comparatively simple but involves the manipulation of data that should not be attempted without clerical help.

It is obvious that in the mere sense of "over-ageness for grade" the end means simply that a child retarded may be over-age for any cause, whether it be factors of slow progress, lost time, or both. Therefore we have used the newfold classification of Ayre's in the Cleveland Survey.

MATERIALS:-

The blank used for the 1910 data was a mimeographed sheet, almost identical with that used by Hill during two years in the New Orleans investigation and is here shown. (See Form B, page 18). The instructions to teachers (Form A, page 17) was used for collecting the data for 1920. and the blank used was another mimeographed sheet (Form C, Page 19), differing from form B in that provision was made for half grades and half year ages, to allow for the semi-annual promotions. Form C was used in two colors, one for boys and one for girls, to avoid mistakes of teachers and to facilitate classification.

The teachers were called together and the blanks distributed and very carefully explained. The age-grade standard used was the "one year per grade standard," for the 1910 data. That is, it is assumed that a child six years of age on the last birthday preceeding the opening of the school term should be in Grade I; seven years of age in Grade II, etc. It is to be noted: (1) This standard is more rigid than the Ayres' standard, which allows a latitude of one year, that is, age six or seven for Grade I, age seven or eight for Grade II, etc. (2) A consideration of the various advantages and disadvantages of the two standards convinces me that the one year standard is the most practicable one for use in Wisconsin. It has already been used in the "Wisconsin Over-Age Children" by Rankin, 1916. A discussion of the merits of the respective

standards can be found in Bachman's "Problems in Elementary School Administration."

For the 1920 data the "half year for half grade standard" was used. That is, it is assumed that a child five and one-half years old on the birthday last preceeding the opening of the school term should be in Grade I B, a child seven years in Grade II A.

Comparison with retardation in other cities are invalid because of the prevailing absence of uniformity in standards of age, time of census, and especially with regard to the crude use of the term retardation.

FORM A

STUDY OF AGE-GRADE STATUS IN EIGHT GRADES
OF THE PLYMOUTH SCHOOLS.

Instructions to Teachers.

Your careful and prompt cooperation will be appreciated in our effort to make this a study worth while. Please return the blanks for each school to my office not later than January 14, 1920.

Before attempting to fill out the following blanks, teachers will please consider carefully the explanations and instructions presented herewith:-

One object of this blank is to ascertain how long the children of each grade have attended elementary schools, disregarding the kindergarten. Use separate blanks for each grade, even if there are two or more grades in a room. Also use separate blanks for boys and girls. Count the children of lowest age in this grade, record the numbers of them who have been in school each given number of years (disregarding years in the kindergarten, but beginning with the child's first entrance into any public or private school), and so on for the children of each age-group. Where exact, full records are not obtainable, the school history of the child should be ascertained by tactful, skilled questioning. Record ages as of last birthday preceding the beginning day of the present term, - September 8, 1919. Count as a half year's attendance the present semester and any time exceeding one quarter of a school year in the child's previous school history and disregard in this previous history any period less than one quarter year. Check all records and additions

carefully. Note the following agreed-upon definitions:

By beginner is meant a child now, for the first time, in any school.

By repeater is meant a child now repeating the work of last year.

Signed:

C. A. Rubado, Principal.

FORM 8

PROGRESS AND AGE STUDY - Plymouth Public Schools - 1916

Girls_____ School_____ Grade_____ Teacher_____

Years in School	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total now belonging.
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
Total															
Beginners															
Pupils now Repeating															
First Time															
Second Time															
Third Time															
Fourth Time															

PLYMOUTH PUBLIC SCHOOLS

FORM C

A STUDY OF RETARDATION

Sex_____ Grade_____ Teacher_____ Date_____

Sem_____ Age_____

	5 2	6 2	7 2	8 2	9 2	10	11:2	12 2	13 2	14 2	15 2	16 2	17	Total
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
Total														
Beg.														
1st RepT														
2ndT														
3rdT														

FORM D

PROGRESS AND AGE STUDY - Plymouth Public Schools 1916

Boys_____ School_____ Grade_____ Teacher_____

Years in School	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Total now Belonging
1															
2		A				D			G						
3															
4		B				E			H						
5															
6		C				F			I						
7															
8															
9															
10															
11															
12															
13															
14															
Total															
Beginners															
Pupils now repeating															
First Time															
Second Time															
Third Time															
Fourth Time															

Chapter III

COMPUTATIONS

It may be of interest to record something of the details of our method of computation, especially as concerns the differentiation of the classes of pupils recorded upon eachblank form into nine groups. In small school systems these memoranda may prove of value in similar attempts at child accounting.

After the blanks had been collected from the teachers they were sorted into the various grade groups and again into blanks respectively for boys and girls. Each blank was then treated as follows: A blue pencil was used to draw a vertical line at the right of the sixth year line for the first grade, seventh year line for the second grade, etc. The blanks were considered one at a time and grade by grade, the writer drawing only the one vertical line until all had been considered.

Then going through the papers again, a horizontal line was drawn under the "first year in school line" for the first grade, under the "second year in school line" for the second grade, etc. Grade by grade and only one horizontal line for each paper, the work was done upon all of the blanks.

Next, with a red pencil, a vertical line was drawn at the left of the six year old line in the first grade, seven year old line in the second grade, etc. Grade by grade, and only one line at a time, the entire series was marked. Then, with a red pencil, a horizontal line was drawn above the blue

horizontal line and above the "first year in school" line for the first grade, "second year in school" line for the second grade, etc., until the entire series was completed. The blanks now appear as in Form D, prepared for grade four.

The blands are now separated into nine parts, which we will call A, B, C, D, E, F, G, H, and I for convenience. In A we have all the pupils under age, making rapid progress; in B the pupils under age, making normal progress; in C the pupils under age, making slow progress; in D the pupils at age, making rapid progress; in E the pupils at age, making normal progress; in F the pupils at age, making slow progress; in G the pupils over age, making rapid progress; in H the pupils over age, makingnormal progress; in I the pupils over age, making slow progress.

The data was then transferred to Table I (page 24) on which we now have for each grade the nine categories, separately for boys and girls. Table II gives the same facts for 1910.

Tables III and IV for 1920 and 1910 respectively give the old age-grade classification and are for purposes of comparison only.

From Table IX (page 24) the percentage Table V was made. From Table II (page 26) the percentage Table VI was made. These were made for the purpose of presenting graphically the nine groups and comparing them for the years 1920-1910. The graphs are on pages 32, A, B, C, D, E, the solid line

representing the status for 1910 and the dotted line for 1920.

Tables I, II, III, and IV present the facts separately for boys and girls. The differences of the sexes then become apparent and the superintendent finds that he must carefully study his system to account for the differences that exist.

Table V is a percentage table which shows the grouping by grades according to age and progress for the two years 1920 and 1910. The table is graphically presented on pages 32A and 32B.

TABLE I.

GRADE PROGRESS - 1920

		RAPID PROGRESS				NORMAL PROGRESS				SLOW PROGRESS					
GRADE		UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	REG.	Repeaters.
I	B					4	9	3	16						
						2	4	1	7			1	1	24	12
	G					4	11	1	16					21	0
						1	4	0	5						
	Both					11	28	5	44			1	1	45	1
II	B	1	1		2	4	7	6	17			1	1	28	5
						1	4	0	5	1	1	1	3		
	G			1	1	2	9	4	15						
						1	3	0	4	0	1	3	4	24	4
	Both	1	1	1	3	8	23	10	41	1	2	5	8	52	9
III	B					0	3	1	4	0	1	0	1		
		6	4	0	10	0	0	1	1	0	0	0	0	16	1
	G	1	0	0	1	1	3	4	8	0	1	2	3		
		1	0	1	2	0	0	1	1	0	0	0	0	15	3
	Both	8	4	1	13	1	6	7	14	0	2	2	4	31	4
IV	B	1	0	0	1	3	2	1	6	0	2	2	4	19	5
		4	1	0	5	0	1	1	2	0	0	1	1		
	G	3	0	1	4	0	7	2	9						
		4	0	1	5	0	2	0	2	0	1	1	2	22	3
	Both	12	1	2	15	3	12	4	19	0	3	4	7	41	8
V	B	5	1	1	7	0	1	0	1	0	0	2	2		
		1	0	0	1	5	0	0	5	1	0	4	5	21	7
	G	4	0	0	4	1	9	1	11	0	0	1	1		
						2	0	0	2	2	0	0	2	20	4
	Both	10	1	1	12	8	10	1	19	3	0	7	10	41	11
VI	B	0	0	1	1	0	4	3	7						
		2	1	0	3	0	0	3	3					14	12
	G	3	0	1	4	1	5	0	6						
		2	2	4	8	0	0	0	0	0	0	5	5	23	5
	Both	7	3	6	16	1	9	6	16	0	0	5	5	37	6
VII	B	1	0	0	1	0	2	2	4	0	0	1	1		
		6	1	2	9	0	0	1	1	0	0	3	3	19	4
	G	3	0	0	3	2	0	0	2	0	0	2	2		
		2	1	2	5	0	0	0	0	2	0	1	3	14	5
	Both	11	2	4	17	2	2	3	7	2	0	7	9	33	9

TABLE I. Concluded.

GRADE PROGRESS - 1920

	RAPID PROGRESS				NORMAL PROGRESS				SLOW PROGRESS					
GRADE	UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	REG.	REPEATERS
VIII B	6	2	3	11	1	2	4	7	0	0	2	2		
	1	1	0	2	3	1	3	7	3	3	3	9	38	11
B	4	0	1	5	1	0	2	3	0	0	2	2		
	1	0	1	2	1	1	5	7	0	0	5	5	24	7
Both	12	3	5	20	6	4	14	24	3	3	12	18	62	18
													34 2	

TABLE II

GRADE PROGRESS - 1910

		RAPID PROGRESS				NORMAL PROGRESS				SLOW PROGRESS						
GRADE		UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	UA	AA	OA	TOTAL	REG.	REP.	BEG.
I	B	0	0		0	4	9	3	16	1	1		2	18	2	16
	G		0	0	0	3	7	3	13		1	1	2	15	2	13
	Both					7	16	6	29	1	2	1	4	33	4	29
II	B					2	10	2	14	0	2	1	3	17	3	0
	G					0	9	4	13			1	1	14	1	0
	Both					2	19	6	27		2	2	4	31	4	0
III	B		1	1	2	2	5	3	10		1	2	3	15	3	
	G			1	1	2	6	4	12	1		2	3	16	3	
	Both		1	2	3	4	11	7	22	1	1	4	6	31	6	
IV	B	1	2		3	2	8	0	10		1	1	2	15	2	
	G	1		1	2	3	7	2	12	1	3	2	6	20	6	
	Both	2	2	1	5	5	15	2	22	1	4	3	8	35	8	
V	B	2		1	3	1	7	3	11	0	1	3	4	18	4	
	G		1		1	1	5	2	8		3	2	5	14	5	
	Both	2	1	1	4	2	12	5	19		4	5	9	32	9	
VI	B						3	2	5		1	2	3	8	3	1?
	G	1		1	2	1	5	3	9	1		1	2	13	2	
	Both	1		1	2	1	8	5	14	1	1	3	5	21	5	
VII	B						3		3	1	1	2	4	7	4	
	G						2	1	3			2	2	5	2	
	Both						5	1	6	1	1	4	6	12	6	
VIII	B		1	1	2	1	5	3	9	2	1	3	6	17	6	
	G			2	2	1	4	5	10	2	2	2	6	18	6	
	Both		1	3	4	2	9	8	19	4	3	5	12	35	12	
		5	5	8	18	23	95	40	158	9	18	27	54	230	54	30

TABLE III

REGISTER BY GRADES AND AGES ONLY

5A			6B			6A			7B			7A			8B			8A			TOTAL REGISTER			5B		
B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A
																						1	1			
																					5	3	8			
																					10	12	22			
																					11	7	18			
																					11	10	21			
																					15	8	23	1		1
																					9	10	19			
																					14	7	21	2		2
																					10	18	28	2	5	7
		3						1													6	8	14			
4		8	1			1		1													10	13	23	2	9	11
				4	4							1		1							3	4	7	1		
		1	4	5	9	1	1	2		1	1	1	1	2							9	13	22	2	2	
			1		1	1	2	3	1	3	4	1		1							4	5	9			
		1	1		1	1	4	5	2		2	3	3	6	4	3	7				12	10	22			
				1	1	1	3	4				1	1	2	3	2	5	3		3	9	7	16			
		1	1	1	2		1	1	2		2		1	1	4		4	4	2	6	12	5	17			
						1	1	2				2	1	3	4	1	5	5	1	6	12	4	16			
									1	1	2	3	1	4	1	2	3	3	6	9	8	10	18			
												1		1	3		3		1	1	4	1	5			
										1	1				1		1		1	1	1	2	3			
																2	2	2		2	2	2	4			
		1																1	1	2	2	1	3			
																			2	2		2	2			
11	4	15	8	10	18	5	13	19	6	6	12	13	8	21	20	10	30	18	14	32	179	163	342	10	16	

TABLE III

REGISTER BY GRADES AND AGES ONLY - 1920

Ages	1B			BA			2B			2A			3B			3A			4B			4A			5B		
	B	G	A:	B	G	A	:B	G	A	: B	G	A:B	G	A:	B	G	A:	B	G	A	: B	G	A:B	G	A
5		1	1																								
5½	4	3	7	1		1																					
6	9	11	20	1	1	2																					
6½	3	1	4	4	4	8	4	2	6																		
7				1		1	7	9	16	3	1	4															
7½				1		1	5	1	6	6	4	10		2	2	2	1	3						1		1
8								2	2	1	4	5	4	4	8	4		4									
8½							2		2				1	3	4	4		4	4	3	7	1	1	2	2		2
9														1	1	1	2	3	4	7	11	3	3	6	2	5	7
9½								1	1										1	3	4	2	3	5			
10																			1		1	2		2	2	9	11
10½																			1		1				1		1
11														1	1								2	2	2	2	4
11½																											
12																											
12½														1	1												
13																											
13½																											
14																											
14½																											
15																											
15½																											
16																											
16½																											
TOTAL	16	16	32	8	5	13	18	15	33	10	9	19	5	12	17	11	3	14	11	13	24	8	9	17	10	16	2

TABLE III Concluded.

		1B			1A			2B			2A			3B			3A			4B			4A			5B	
		B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G	A	B	G
Below Age	No.	4	4	8	2	1	3	4	8	6	3	1	4	0	2	2	6	1	7	4	3	7	4	4	8	5	5
	%	25	25	25	25	20	23	22	13	18	30	11	21		17	12	55	33	50	36	23	29	50	44	47	50	31
At Age	No	9	11	20	4	4	8	7	9	16	6	4	10	4	4	8	4	0	4	4	7	11	2	3	5	2	9
	%	56	69	63	50	80	61	39	60	48	60	44	53	80	33	47	36	0	29	36	54	46	25	33	29	20	56
Over Age	No.	3	1	4	2	0	2	7	4	11	1	4	5	1	6	7	1	2	3	3	3	6	2	2	4	3	2
	%	19	6	13	25	0	16	39	27	34	10	44	26	20	50	41	9	67	21	28	23	25	25	23	24	30	13
TOTAL	No.	16	16	32	8	5	13	18	15	33	10	9	19	5	12	17	11	3	14	11	13	24	8	9	17	10	16

TABLE III Concluded

5A			6B			6A			7B			7A			8B			8A			TOTALS		
B	G	A:	B	G	A:	B	G	A:	B	G	A:	B	G	A:	B	G	A:	B	G	A:	B	G	A
7	4	11	0	4	4	2	2	4	1	4	5	6	4	10	7	5	12	7	2	9	62	48	110
64	100	73		40	22	33	15	21	16	67	42	46	50	48	35	50	40	39	14	28	35	29	32
0	0	0	4	5	9	1	2	3	2	0	2	1	1	2	4	0	4	5	1	6	59	60	119
0	0	0	50	50	50	16	15	16	33	0	16	8	12	10	20	0	13	28	7	19	33	37	35
4	0	4	4	1	5	3	9	12	3	2	5	6	3	9	9	5	14	6	11	17	58	55	113
36		27	5	10	28	50	70	63	50	33	42	46	38	42	45	50	47	33	79	53	32	34	33
11	4	15	8	10	18	6	13	19	6	6	12	13	8	21	20	10	30	18	14	32	179	163	342

TABLE V.

PERCENTAGE TABLES - 1920

	I	II	III	IV	V	VI	VII	VIII	TOTAL
Under Age Rapid Progress	0	1.9	25.8	29.2	24.4	19	33.3	19.3	17.8
At Age Rapid Progress	0	1.9	12.9	2.4	2.4	8.1	6.	4.8	4.4
Over Age Rapid Progress	0	1.9	3.3	4.8	2.4	16.2	12.1	8.	5.9
Under Age Normal Progress	24.4	15.5	3.3	7.3	19.5	2.8	6.	9.7	11.7
At Age Normal Progress	62.2	44.2	19.3	29.2	24.4	24.3	6	6.4	27.5
Over Age Normal Progress	11.1	19.2	22.6	9.7	2.4	16.2	9	22.6	14.6
Under Age Slow Progress	0	1.9	0	0	7.3	0	6	4.8	2.7
At Age Slow Progress	0	3.8	6.4	7.3	0	0	0	4.8	2.9
Over Age Slow Progress	2.3	9.6	6.4	9.7	17.1	13.5	21.2	19.4	12.5
TOTAL	100.0	99.8	100.0	99.6	99.9	100.1	99.6	99.8	100.0

TABLE VI

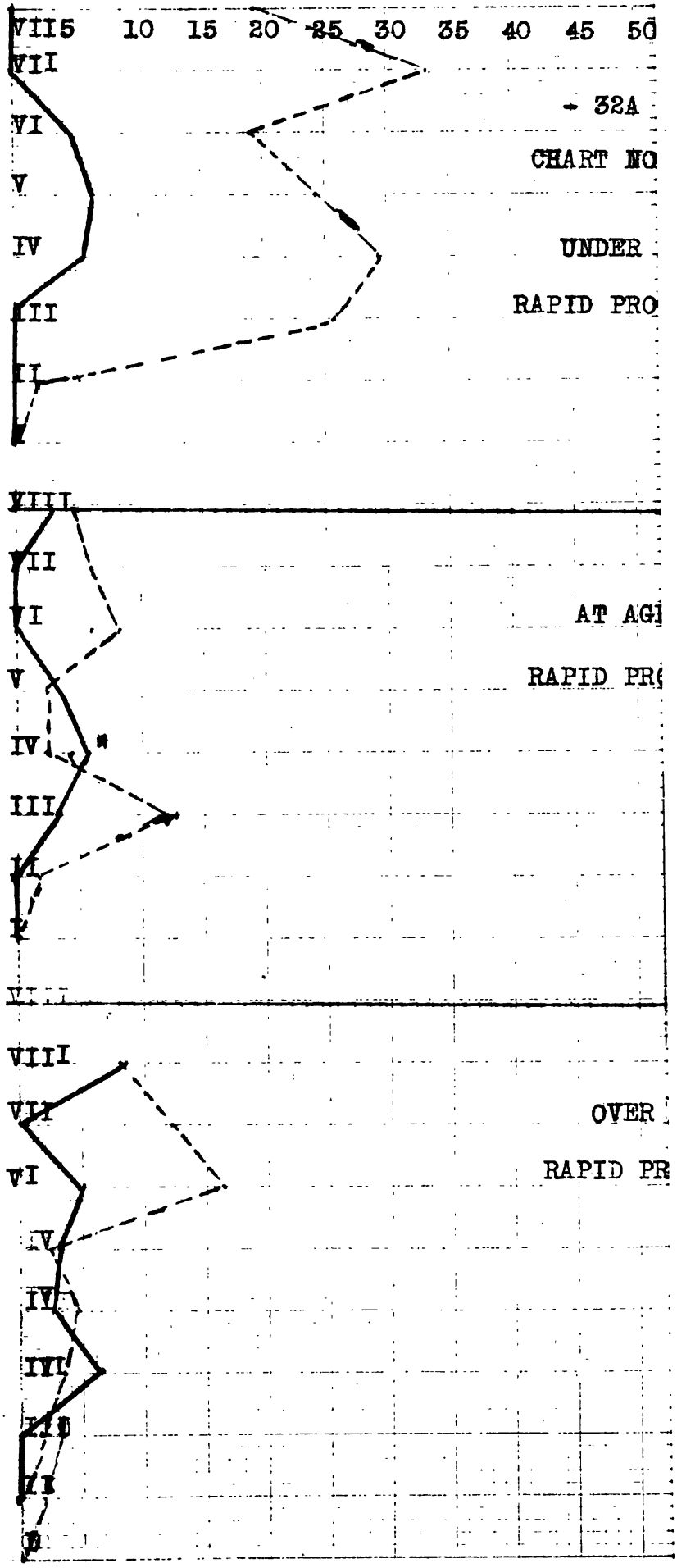
PERCENTAGE TABLE-1910

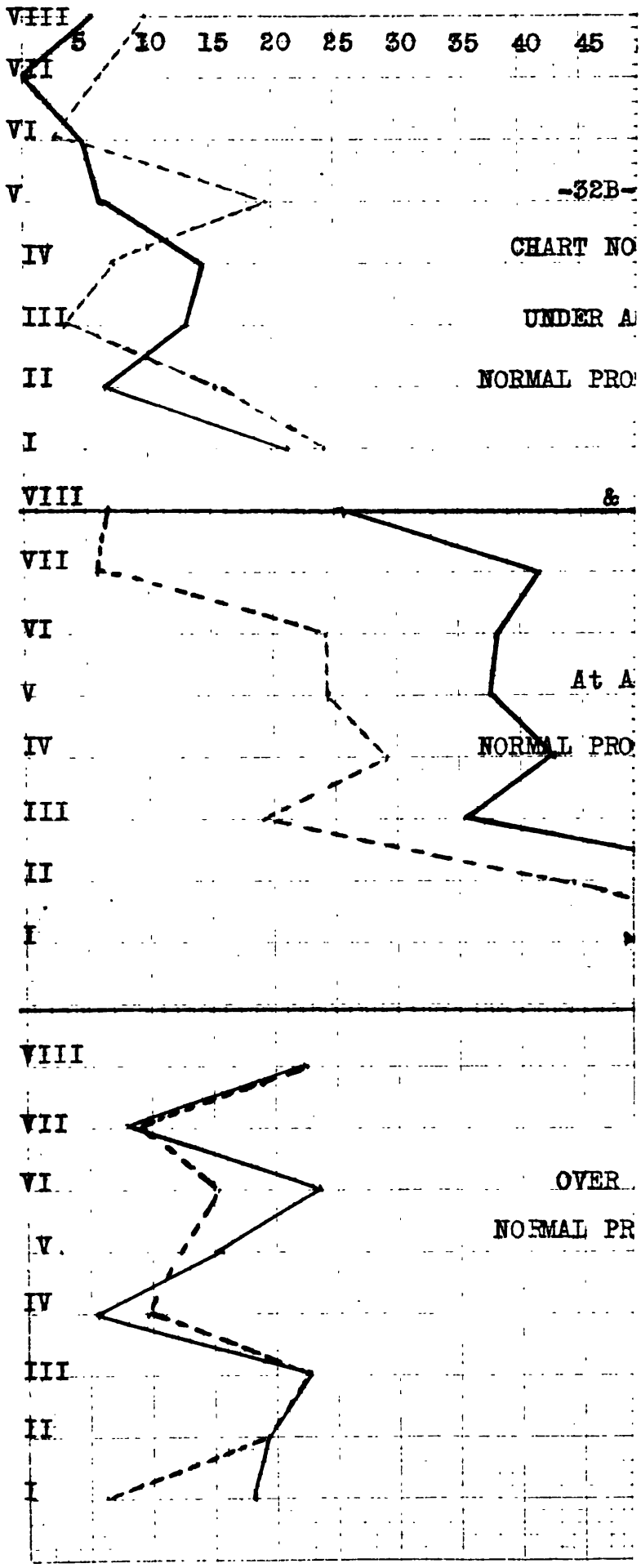
	I	II	III	IV	V	VI	VII	VIII	TOTAL
Under Age Rapid Progress	0	0	0	5.7	6.2	4.7	0	0	2.3
At Age Rapid Progress	0	0	3.2	5.7	3.1	0	0	2.8	2.3
Over Age Rapid Progress	0	0	6.4	2.9	3.1	4.7	0	8.6	3.5
Under Age Normal Progress	21.2	6.4	13.	14.3	6.2	4.7	0	5.7	10.
At Age Normal Progress	48.4	61.3	35.5	42.9	37.5	38.1	41.7	25.7	41.3
Over Age Normal Progress	18.1	19.3	22.6	5.7	15.6	23.8	8.3	22.8	17.4
Under Age Slow Progress	3.1	0.	3.2	2.9	0.	4.7	8.3	11.4	3.9
At Age Slow Progress	6.3	6.4	3.2	11.4	12.5	4.7	8.3	8.6	7.8
Over Age Slow Progress	3.1	6.4	13.	8.6	15.6	14.3	33.3	14.3	11.7

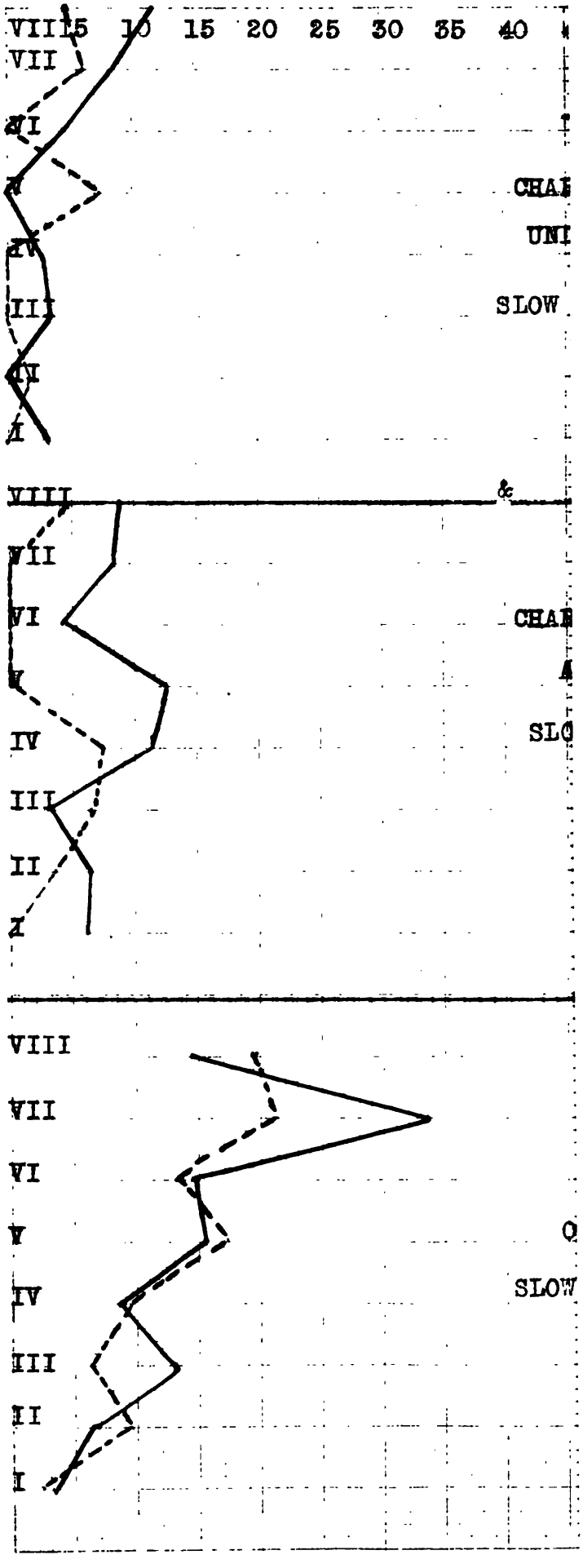
TABLE VII

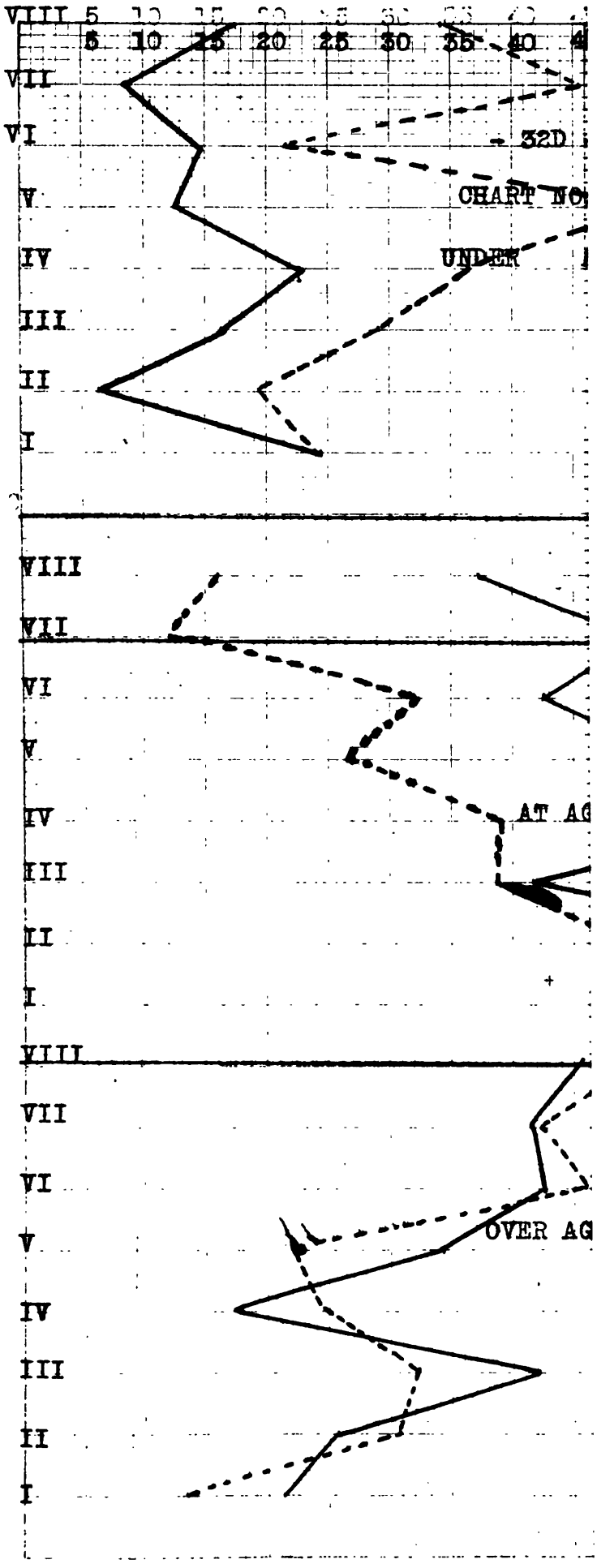
PERCENTAGE TABLES * 1910 -1920

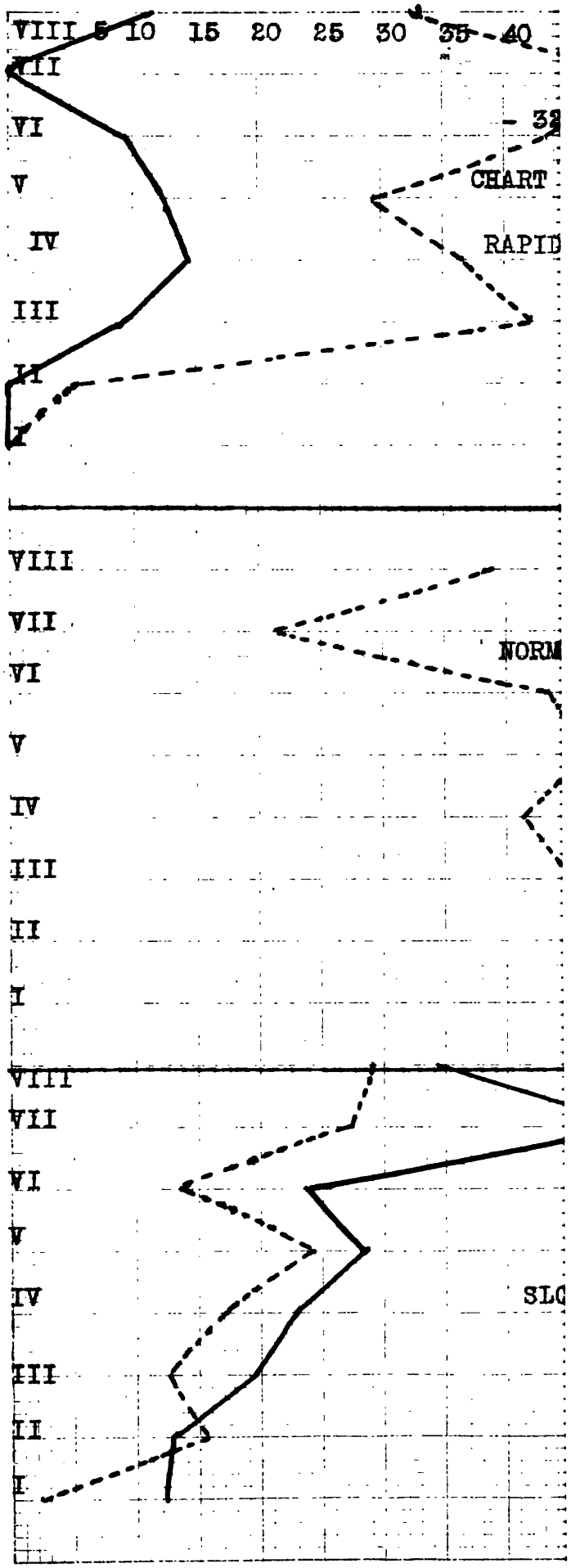
		I	II	III	IV	V	VI	VII	VIII	TOTAL 1910	TOTAL 1920
Under Age											
	1910	24.3	6.4	16.2	22.9	12.4	14.1	8.3	17.1	16.2	
	1920	24.4	19.2	29.	36.6	51.2	21.6	45.5	34.		32
At Age											
	1910	54.7	67.7	41.9	60	53.1	42.8	50.	37.1	51.4	
	1920	62.2	50	38.7	39	26.8	32.4	12.1	16.0		35
Over Age											
	1910	21.2	25.7	42.	17.2	34.3	42.8	41.6	45.7	32.5	
	1920	13.3	30.8	32.2	24.4	22.	46.	42.4	50.0	[illegible]	33
Rapid Progress											
	1910	0	0	9.6	14.3	12.4	9.4	0.	11.4	8.0	
	1920	0	58.	42.	36.6	29.3	43.3	57.5	32.3		28
Normal Progress											
	1910	87.6	87.	71.1	62.9	59.3	66.7	50.0	54.2	68.7	
	1920	97.8	78.8	45.1	41.3	46.3	43.2	21.2	38.7		54
Slow Progress											
	1910	12.4	12.9	19.3	22.8	28.2	23.8	50	34.3	23.3	
	1920	2.2	15.4	12.9	17.1	24.4	13.5	27.3	29		18











Chapter IV

CONCLUSIONS

The pupils do not complete the work of the grades in eight years as is clearly shown by the small tables below.

1910 - Index of Efficiency.

	Boys	Girls	All
Average age in Grade V	10.4	10.4	10.4
Average age in Grade I	5.8	6.0	5.9
Length of time it takes to complete first four grades	4.6	4.4	4.5
Divide by 4 to find time it takes to complete one grade	1.15	1.1	1.125
Multiply by 8 to find time it takes to complete 8 grades	9.2	8.8	9.0

1920 - Index of Efficiency.

	Boys	Girls	All
Average Age in Grade VB	9.5	9.8	9.7
Average Age in Grade IB	6	5.9	5.9
Length of time to complete first 8 half grades	3.5	3.9	3.8
Divide by 8 to find time it takes to complete one half grade	.44	.49	.475
Multiply by 16 to find time to complete eight grades	7.04	7.84	7.6

While this may not be strictly accurate, it is close enough to show that we are not justified in thinking that it takes the average child eight years to complete the grades. It took the average girl 8.8 years and the average boy 9.2 years to complete the grades in 1910. Or, the average pupil completed the grades in 9 years.

Figuring the cost per pupil per year for instruction, one can readily see what a possible burden this slow progress is on the community in terms of money, not to say anything of the effect on the child and the teacher of repeating the work.

In 1920 the average girl completed the work in 7.84 years, the average boy in 7.04 years and the average pupil in 7.6 years. This shows a vast improvement in the time required to complete the grades. The boys showed the most improvement, proving that the school as it is now constituted does not favor the girls. The improvement is 1.4 years in case of the average student, 1.8 years in the case of the boys and .96 years in the case of the girls.

This does not necessarily mean that retardation has been materially decreased, for it may be accounted for by the increase in rapid progress pupil. Examination of the Tables and graphs will supply the reason.

Important facts learned from Tables and Charts.

For the first grade.

1. There were no under age, rapid progress pupils in the first grade. This, of course, is impossible. In fact there can be no rapid progress in the first grade.

2. In 1910 - 21.2 per cent of the first grade pupils were under age making normal progress, while in 1920 that had increased to 24.4 per cent. This was probably due to breaking away from the hard and fast rule that no child could leave the kindergarten before he was six years of age.

3. Those at age, making normal progress in the first grade 48.4 per cent of the total in 1910. This again increased to 62.2 per cent in 1920.

4. The pupils who were over age, yet making normal progress in the first grade in 1910 were 18.1 per cent of the total in that grade. In 1920 there were but 11.1 per cent of the grade enrollment. This shows that the children on the whole, are getting started earlier.

5. In the next group, under age, yet making slow progress, we detect some who would be classed as normal with the old age-grade classification. In 1910 this group was 3.1 per cent of the grade enrollment but in 1920 there were none.

6. Another group whose age is right yet who are making slow progress comprised 6.3 per cent of all in the grade for 1910, but again they have disappeared in 1920.

7. The next group which is the very bad group because they are both over-age and are making slow progress dropped from 3.1 per cent in 1910 to 2.3 per cent in 1920.

For the eighth grade.

8. From nothing to 19.3 per cent is the increase from 1910 to 1920 in the pupil who are under age and yet have made rapid progress. This shows as perhaps nothing else would, the effect of flexible promotions and semi-annual promotions.

9. The at age, rapid progress group increased in the ten years from 2.8 per cent to 4.8 per cent, practically doubling.

10. The pupils who would have been considered sub-normal in 1910 by the old classification but who had made rapid progress while over age were 8.6 per cent of the enrollment and in 1920 it had remained about the same, namely 8 per-cent.

11. The under age, normal progress pupils, who are the ones who entered school early and have been progressing with their class, increased from 5.7 per cent in 1910 to 9.7 per cent in 1920.

12. The school made pupils conform more nearly to the normal in 1910 as is evidenced by the most normal group - at age - normal progress - This group fell from 25.7 per cent in 1910 to 6.4 per cent in 1920.

13. The normal progress group who were over age was 22.8 per cent in 1910 and about the same in 1920 or 22.6 per cent.

14. The under age - slow progress group decreased from 1910 to 1920 from 11.4 per cent to 4.8 per cent and the at age, slow progress group from 8.6 per cent to 4.8 per cent.

15. But the surprising thing is that we find the over age, slow progress pupils increasing from 14.3 per cent in 1910 to 19.4 per cent in 1920.

To get a better idea as to the whole school condition we must take the total for the whole school and examine their status. Taking into consideration all the grades we find the following changes from 1910 to 1920.

16. Under age - rapid progress increased from 2.3 per cent to 7.8 per cent.

17. At age - rapid progress from 2.3 per cent to 4.4 per cent.

18. Over age-rapid progress from 3.5 per cent to 5.4 per cent.

19. Under age - normal progress from 10 per cent to 11.7 per cent.

20. At age - normal progress, or the most normal group, decreased from 41.3 per cent to 27.5 per cent, showing that we

20. concluded.

are breaking away from the old ideas of progress.

21. Another decrease in the normal progress group is found in the over age pupils. The decrease is from 17.4 per cent to 14.6 per cent. Not much, but encouraging.

22. Getting into the slow progress group, we find less under age in 1920, the difference bring that between 3.9 per cent and 2.7 per cent.

23. Those at age making slow progress again show a decline, namely from 7.8 per cent to 2.9 per cent.

24. But the surprising feature is that there are 11.7 per cent of all pupils over age making slow progress in 1910, while in 1920 that has increased to 12.5 per cent.

25. A glance at percentage table VII will show the unreliability of the old age-grade standard of classification. Here the difference is that and the progress standard is very apparent. The fact that the groups are very different is shown in the progress classification in the previous tables.

26. Considering the school as a whole and only the rate of progress for the ten year interval we find the condition has naturally improved.

27. There were 8 per cent of the total number enrolled who had made rapid progress in 1910. In 1920 that had risen to 28 per cent, This shows clearly the fact that pupils will

27. concluded.

take advantage of the opportunity if offered.

28. There are not so many conforming to the old grade system as formerly for we find that while, in 1910, 68.7 per cent were making normal progress, there were but 54 per cent following the beaten path in 1920.

29. The slow progress group has not diminished as much as we expected for the drop is only from 23.3 per cent to 18 per cent. This shows then that flexible promotions and semi-annual promotions do not help the very bad group as much as they do the brighter, more industrious pupils.

Chapter V.

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Approved

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